PhytoKeys 35: 17–22 (2014)
doi: 10.3897/phytokeys.35.6622
www.phytokeys.com

RESEARCH ARTICLE

A peer-reviewed open-access journal
PhytoKeys
Launched to accelerate biodiversity research

Piptochaetium fuscum (Nees ex Steud.) Barkworth, Ciald., & Gandhi, a new combination replacing *Piptochaetium setosum* (Trin.) Arechav.

Mary E. Barkworth[1], Ana María Cialdella[2], Kanchi Gandhi[3]

1 *Intermountain Herbarium, Utah State University, 5305 Old Main Hill, Logan, Utah 84322-5305 U.S.A.* **2** *Museo Botánico, CC 22- B1642HYD San Isidro, Buenos Aires, Buenos Aires, Argentina* **3** *Herbaria, Harvard University, 22 Divinity Avenue, Cambridge, Massachusetts 02138-2020, U.S.A.*

Corresponding author: *Mary E. Barkworth* (mary.barkworth@usu.edu)

Academic editor: *L. Versieux* | Received 15 November 2013 | Accepted 13 February 2014 | Published 26 February 2014

Citation: Barkworth ME, Cialdella AM, Gandhi K (2014) *Piptochaetium fuscum* (Nees ex Steud.) Barkworth, Ciald., & Gandhi, a new combination replacing *Piptochaetium setosum* (Trin.) Arechav. PhytoKeys 35: 17–22. doi: 10.3897/phytokeys.35.6622

Abstract

A new name, *Piptochaetium fuscum*, is provided for a taxon hitherto known as *Piptochaetium setosum* (Trin.) Arechav. Morphological, anatomical, and molecular studies that argue against including *Piptochaetium* in *Stipa*, and hence use of *S. purpurata* (Phil.) Columbus & J.P. Sm., are cited.

Keywords

Stipeae, *Stipa*, *Piptochaetium*, nomenclature

Introduction

In February 2010, Gandhi, in responding to an inquiry from Dr. Travis Columbus, noticed that the name *Piptochaetium setosum* (Trin.) Arechav. was superfluous and illegitimate at the time of publication because its basionym, *Urachne setosa* Trin., was itself superfluous and illegitimate at the time of publication, Trinius having included in it two older and validly published names, *Stipa panicoides* Lam. and *Oryzopsis setacea* Rich. *Stipa panicoides* is the basionym of *P. panicoides* (Lam.) Desv., a taxon that is now con-

Copyright *Mary E. Barkworth et al.* This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

sidered distinct from *Piptochaetium setosum* (Parodi 1944; Cialdella and Arriaga 1998; Peña et al. 2008). In addition, Parodi, who examined the types of all the names involved, stated that the type of *Oryzopsis setacea* was evidently based on the same material as that of *Stipa panicoides* (Parodi 1944, p. 299). Thus neither of the names Trinius treated as synonyms of *Urachne setosa* can be used as the basionym for *P. setosum* when this taxon is considered to be distinct from *P. panicoides*.

Columbus and Smith have published a new name for the taxon, but they placed it in *Stipa* L. as *Stipa purpurata* (Phil.) Columbus & J.P. Sm. (Columbus and Smith 2010). We strongly disagree with their generic interpretation. *Piptochaetium* J. Presl, as interpreted by Parodi (1944; Parodi and Freier 1945; Thomasson 1978, 1979; Cialdella and Arriaga 1998; Cialdella and Guissani 2002; Cialdella et al. 2007; Jacobs et al. 2007; Barber et al. 2009) has been shown to be morphologically, anatomically, and molecularly distinct from other genera of the Stipeae as well as monophyletic. The purpose of this paper is to provide a valid combination in *Piptochaetium* for the taxon hitherto known as *P. setosum* in *Piptochaetium*.

Parodi (1944), in his revision of *Piptochaetium*, listed four synonyms for *Piptochaetium setosum*: *Urachne fusca* Steud. (Steudel 1854) (the basionym of *P. fuscum*), *Piptochaetium purpuratum* Phil. (Philippi 1857), *Piptochaetium pallidum* Phil. ex Griseb. (Grisebach 1879), and *P. macrocarpum* Phil. (Philippi 1896). In describing *Urachne fusca*, Steudel cited a specimen collected by Cuming near Valparaiso, Chile. Parodi stated that he had examined a specimen in B that Nees had annotated as *Piptatherum fuscum*, Valparaiso, Cuming, Herb. Lindley. He also examined two other specimens, one from K and one from CGE, that were labeled Cuming 453. He stated that all three specimens were identical to each other and to the type material of *Urachne setosa* Trin.

Results and discussion

We have examined images from each of the CGE and K specimens cited above. We agree with Parodi that they belong to *Piptochaetium setosum* as recognized by Arechavaleta (1896) and Parodi (1944) and, on that basis, present the following new combination:

Piptochaetium fuscum **(Nees ex Steud.) Barkworth, Ciald., & Gandhi, comb. nov.**
urn:lsid:ipni.org:names:77136235-1
http://species-id.net/wiki/Piptochaetium_fuscum

Basionym. *Urachne fusca* Nees ex Steud., Syn. Pl. Glumac. 1(2): 123. 1854 [1855 publ. 2–3 Mar 1854]. Lectotypus: K000433539, Herbarium Hookerianum 1867 (http://specimens.kew.org/herbarium/K000433539), imaginem videmus; Isolectotypi K000433540, Herbarium Benthianum 1854 (http://specimens.kew.org/herbarium/K000433540), imaginem videmus; CGE, Herb. J. Lindley, purchased 1866 (figs 1, 2, 3); "prope Valparaiso, Chili; H. Cuming 453, 1831; Imagines videmus.

Figure 1. Isotype of *Piptochaetium fuscum* deposited at CGE, the Cambridge University Herbarium, England. Image used with permission.

Figure 2. Native distribution of *Piptochaetium fuscum*. Information and base map from Zuloaga et al. (2008), used with permission of Missouri Botanical Garden Press.

The three specimens are from the same gathering and conform to the protologue. We chose K000433539 as the lectotype because it has more material, both reproductive and vegetative, than the other specimens. Columbus and Smith (2010) were forced to base their name on *P. purpuratum* Phil. because the name *Stipa fusca* had already been used for an Australian taxon by Hubbard (1925).

Parodi (1944) stated that *Piptochaetium fuscum* grew in central Chile, extending from Valparaiso and Santiago to Valdivia. This statement was confirmed by Zuloaga et al. (2008) who added that it grew at 0-800 m. There are only three South American records with latitude and longitude in the Global Biodiversity Information Facility. They were collected at 37.41S, 72.01W [SI 268952]; 36.48S, 72.71W [BAA 416344], and 36.56S, 72.49W [BAA 416345]. Zuloaga et al. (2008) provide information in terms of Chile's regions (Fig. 2). The species is also known from one locality in Marin County, California, where it was first collected in 1978 (Consortium of California Herbaria 2014). The origin of the population is unknown. It does not appear to have spread since its introduction.

To determine the conservation status of *Piptochaetium fuscum*, a search should be made for specimens in Chilean herbaria and field work conducted to locate natural populations. Such activities were beyond the scope of our study.

Acknowledgments

We thank Christine Bartram and Maria Vorontsova, at CGE and K, respectively, for their rapid response to our request for images of the Cuming 453 specimens at their institutions and Victoria Hollowell of Missouri Botanical Garden Press for giving permission to use the map on p. xix of Zuloaga et al. (2008) to illustrate the native distribution of the species. This research was supported by the Utah Agricultural Experiment Station, Utah State University, and approved as journal paper number 8622.

References

Arechavaleta J (1896) Las Gramineas Uruguayas. Anales del Museo Nacional de Montevideo, Montevideo 4.

Barber JC, Hames KA, Cialdella AM, Guissani LM, Morrone O (2009) Phylogenetic relationships of *Piptochaetium* Presl (Poaceae Stipeae) and related genera reconstructed from nuclear and chloroplast sequence datasets. Taxon 58: 375–380.

Consortium of California Herbaria. 2014-01-09. Records of Piptochaetium setosum. http://ucjeps.berkeley.edu/consortium/

Cialdella AM, Arriaga M (1998) Revisión de las especies Sudamericanas del género *Piptochaetium* (Poaceae, Pooideae, Stipeae). Darwiniana 36: 107–157.

Cialdella AM, Guissani LM (2002) Phylogenetic relationsips of the genus *Piptochaetium* (Poaceae, Pooieae, Stipeae): Evidence from morphological data. Annals of the Missouri Botanical Garden 89: 305–336. http://dx.doi.org/10.2307/3298598

Cialdella AM, Guissani LM, Aagesen L, Zuloaga FO, Morrone O (2007) A phylogeny of *Piptochaetium* (Poaceae: Pooideae: Stipeae) and related genera based on a combined analysis including *Trnl-f*, *Rpl16*, and morphology. Systematic Botany 32: 545–559. http://dx.doi.org/10.1600/036364407782250607

Columbus JT, Smith JP (2010) Nomenclatural changes for some grasses in California and the *Muhlenbergia* clade (Poaceae). Aliso 28: 65–767.

Grisebach A, Lorentz PR (1879) Symbolae ad Floram argentinam. Dieterich'sche Verlags-Buchhandlung, Göttingen, 436 pp.

Hubbard CE (1925) *Stipa fusca*. In: Decades Kewenses, Plantarum novarum in herbario horti regii conservatorum Decas CXIII. Bulletin of Miscellaneous Information, Kew 1925: 432.

Jacobs SWL, Bayer R, Everett J, Arriaga M, Barkworth ME (2007) Systematics of the tribe Stipeae (Gramineae) using molecular data. Aliso 23: 349–361.

Parodi LR (1944) Revisión de las gramineas Australes Americanas del genero *Piptochaetium*. Revista del Museo de la Plata, Bot. 6: 1–310.

Parodi LR, Freier F (1945) Obervaciones taxonómicas sobre las gramineas estipeae. Ciencia e Investigación 1: 144–146.

Peña Hernández C, Negritto MA, Ruiz E, Baeza M (2008) A new combination in *Piptochaetium* (Poaceae, Stipeae) from Chile. Novon 18: 374–377. http://dx.doi.org/10.3417/2006130

Philippi RA (1857) Plantas Novarum Chilensium. Linnaea 29: 1–110.

Philippi RA (1896) Plantas nuevas chilenas. Anales de la Universidad de Chile. Santiago 43: 479–583.

Steudel EG (1855) [published 1854]. Synopsis plantarum graminearum. Metzler JB, Stuttgart, Germany.

Thomasson JR (1978) Epidermal patterns of the lemmas in some fossile and living grasses and their phylogenetic significance. Science 199: 975–977. http://dx.doi.org/10.1126/science.199.4332.975

Thomasson JR (1979) Late Cenozoic grasses and other angiosperms from Kansas, Nebraska and Colorado: Biostratigraphy and relationships to living taxa. Kansas Geological Survey, Bulletin No. 218. University of Kansas Publications, Lawrence, Kansas, U.S.A., 68 pp.

Zuloaga FO, Morrone O, Belgrano MJ (Eds) (2008) Catálogo de las plantas vasculares del Cono Sur. Vol. 1. Missouri Botanical Garden Press, St. Louis, Missoui, U.S.A.